

RS - INT
Mt-1

March 12, 1936

SNOW INJURY TO CROP TREES

Timber Stand Improvement, Bannock Creek

In the spring of 1935 a tally was made of snow injured crop trees on five thinning blocks in Bannock Creek. The tally gives us the following figures:

Method of Thinning	No. of Crop Trees	Average D.B.H.	No. of Snow Injured Crop Trees	% Snow Injury
Check	896	:	38	4.24
10' Conventional	823	2.92"	67	8.14
10' Crop	972	2.38	107	11.01
15' Crop	542	3.33	54	9.96
20' Crop	308	2.49	42	13.64

The check method, while showing least snow loss, will not be considered since the future benefit of thinning will outweigh the present snow loss.

Of the remaining four methods, the 20-foot crop tree showed least loss in number of crop trees, but on a percentage basis of total crop trees showed greater loss than any of the other methods.

The 15-foot crop tree method showed a relatively low loss in both number and percentage, but as in the case of 20-foot crop tree method the number of samples was few.

The 10-foot crop on a number and percentage basis showed up very poor, but note must be taken that the average diameter of the class was lower than any of the others and hence more susceptible to snow injury.

The 10-foot conventional method showed a small loss in number and percentage both, while ranking with the other methods in number of crop trees.

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From the preceding table and discussion one cannot make a clear-cut decision as to which method is best adapted for least snow injury, but the writer would give weight to the 10-foot conventional method.

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Additional Note

Assuming that the average rate of injury indicated for each diameter class would be true regardless of method of thinning, we may compute "theoretical" losses for the plots in each method of thinning as follows:

	: 1"	: 2"	: 3"	: 4"	: 5"	: Over 5"	Total	Actual	Ratio
	Trees Injured:						Total	Total	Actual
	:	:	:	:	:	:	:	:	Theoretical
Check	: 20.6	: 38.7	: 14.9	: 2.1	: 0.8	: 0	: 77.1	: 38	: .49
	:	:	:	:	:	:	:	:	:
10' conv.	: 27.4	: 39.3	: 8.4	: 1.4	: 0.5	: 0	: 77.0	: 67	: .87
	:	:	:	:	:	:	:	:	:
10' crop	: 44.7	: 41.6	: 8.9	: 1.4	: 0.5	: 0	: 97.1	: 107	: 1.10
	:	:	:	:	:	:	:	:	:
15' crop	: 8.0	: 17.7	: 8.3	: 1.6	: 0.9	: 0	: 36.5	: 54	: 1.48
	:	:	:	:	:	:	:	:	:
20' crop	: 9.5	: 11.9	: 4.9	: 0.6	: 0.3	: 0	: 27.2	: 42	: 1.54
	:	:	:	:	:	:	:	:	:

Although such a basis of computation may be open to question (as diameter proportions themselves naturally differ in different methods), the results indicate a rather strong relationship between cutting method and snow damage. Relative loss on the thinned plots ranges from nearly double to over three times that on the unthinned check plot. In the crop tree methods, the wider spacing seems to result in greater relative loss, for no apparent reason.

Although the loss of choice crop trees is to be deplored a serious matter in any method, it should be recognized that with a 10-foot spacing there are still several times as many crop trees left as will be present at maturity, and with the wider spacings there are many good trees between the originally designated crop trees that may well take their places if the latter are lost. Of course we cannot afford, and do not expect, to incur such losses as these annually. The rate of loss may be expected to fall off rapidly as the weaker trees are weeded out and the others become adjusted to their newly gained freedom.

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